



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

May 24, 2007

Reply To
Attn Of: ETPA-088

Ref: 01-062-AFS

Ray Henderson
Salmon-Challis National Forest
1206 South Challis
Salmon, Idaho 83467

Dear Mr. Henderson:

The U.S. Environmental Protection Agency (EPA) has reviewed the draft Environmental Impact Statement (DEIS) for **Idaho Cobalt Mine Project (ICP)** in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309, independent of NEPA, specifically directs EPA to review and comment in writing on the environmental impacts associated with all major federal actions. Under our policies and procedures, we evaluate the document's adequacy in meeting NEPA requirements.

On August 9, 2006, EPA signed a Memorandum of Understanding to be a cooperating agency for the ICP EIS. We became a cooperating agency because of EPA's pending decision regarding a National Pollutant Discharge Elimination System (NPDES) permit for the project and so that the EIS could serve to fulfill our NEPA compliance responsibilities (40 CFR Part 6).

The DEIS evaluates the No Action Alternative (Alternative I) and four action alternatives for the primary extraction of cobalt in an underground mine operation in the Salmon-Challis National Forest. Alternative II is the Proposed Action submitted by Formation Capital Corporation (FCC). Alternative IV was developed by the Interdisciplinary Team (IDT) and has been identified as the Preferred Alternative.

We appreciated the opportunity to work with the Forest Service early in the process and to be a part of the review team for various technical reports and the preliminary draft EIS (PDEIS). We reviewed the PDEIS in January 2007. We are reiterating our comments from that review supporting the modeling because we feel that this was a key component for fully evaluating the environmental impacts to water resources among the alternatives and we promote this type of modeling for future analyses. However, another key element in the PDEIS that we strongly supported was the inclusion of the bond estimate and the associated assumptions and analysis. This information was removed and not presented in the DEIS. Our concerns regarding the omission of this information are expanded below and in our detailed comments.

EPA has assigned a rating of EC-2 (Environmental Concerns-Insufficient Information) to the Preferred Alternative, Alternative IV in the DEIS. Our rating and a summary of our comments will be published in the Federal Register.

Our main environmental concern is the lack of information about financial assurance, specifically, the lack of information about the assumptions, cost estimates, and plans for long-term water management and other reclamation activities associated with the project. A key component of evaluating environmental impacts of mining projects is the information on which the effectiveness of closure and reclamation activities is based. As we have consistently stated since the early scoping phase of this project, we feel that this information is critical to include in the EIS because of the need to disclose potential environmental risks to the public, to provide assurance that significant environmental impacts will be avoided and that mitigation measures, operation and maintenance, and closure/post closure activities will be adequately bonded if the company fails to meet its requirements. This is especially crucial because of the potential for perpetual water treatment this project may require, and because there is an ongoing Superfund cleanup occurring at the site.

In addition, we have concerns regarding unclear information about impacts to fishery resources and the lack of information about cultural resources. There is also a need for clarifying information regarding adequate mitigation measures for handling and disposing of contaminated soils.

EPA supports the modeling performed through using the Dynamic Systems Model to predict impacts to water quality. We believe that the methods employed appropriate, conservative assumptions. The document presents a reasonable range of alternatives and the mitigation measures were designed to provide a high level of environmental protectiveness. Also, we appreciate the Forest Service's inclusion of information related to our NPDES permit authority.

Thank you for the opportunity to comment on the draft EIS. A copy of our detailed comments and rating criteria are enclosed. Please feel free to contact Lynne McWhorter at (206) 553-0205 or by electronic mail at mcwhorter.lynne@epa.gov with any questions you may have.

Sincerely,

/s/

Christine Reichgott, Manager
NEPA Review Unit

Enclosure

cc:
EPA Idaho Operations Office

**EPA's Comments on
Idaho Cobalt Mine Project (ICP)
Draft Environmental Impact Statement (DEIS)**

GENERAL COMMENTS

The Forest Service, along with input from the IDT, developed alternatives that cover a range of options as well as added elements that should make the project significantly more environmentally protective. The addition of the amendment to backfilled waste rock to increase pH will help reduce metals mobility and protect water quality. The plan to install, test, and verify performance of the ground water capture system in advance of its use is also important. This is a significant improvement to the mine plan as originally proposed.

The Dynamic Systems Model (DSM) is used to predict water quality impacts in the PDEIS. We support the modeling runs and results described in terms of “best case,” “most predictable case,” and “worst case” scenarios. The presentation of model results and accompanying text adequately characterizes the limitations of the modeling approach, assesses relative differences between alternatives, and presents information related to uncertainty in predicting environmental outcomes such as precipitation events. We also appreciate the inclusion of Appendix B (Surface Water and Groundwater Flows and Predicted Water Quality), which provides tables of the various modeling runs and potential outcomes in an easily understandable manner.

For ease of review, we would appreciate a format in the “Response to Comments” section of the final EIS that couples comments with a reference to the document section where modifications were made, or inclusion of a discussion explaining why recommendations were not adopted. Another feature that would ease review is numbering the sections and subsections of the document (2.1.2, 2.1.3.6, etc.)

Financial Assurance

In our comments on the PDEIS we stated that, “As referenced in our 2001 scoping comments in response to the Federal Register Notice and our comments on the previous PDEIS, EPA strongly supports disclosure of the financial assurance estimate in the EIS. In order to support the estimate, we suggest including a summary of how the estimate was developed in an appendix to the DEIS.” Unfortunately the financial assurance estimate was not included in the DEIS. We continue to believe that the financial assurance estimate and a discussion of how the estimate was developed (i.e., major items and associated cost), must be included in the EIS in order to fully disclose the potential for environmental impacts. The amount and viability of financial assurance is a critical factor in determining the effectiveness of reclamation and closure activities and, therefore, the significance of the reasonably foreseeable environmental impacts. NEPA requires that information on reasonably foreseeable environmental impacts and the means to mitigate such impacts be included in EISs. Given the known environmental impacts from historic mining on soils, sediment, and surface water in the project area, and the time, effort, and money that has been incurred by federal, state, and private entities in the ongoing remediation of those impacts, it is imperative that the evaluation of environmental consequences from this project include financial assurance costs based on the best available information. Also, we agree

and support the Forest Service's inclusion of associated, detailed financial assurance information in the EIS administrative record to support the final decision in the Record of Decision.

The DEIS includes a brief discussion of financial assurance in the summary and on page 2-36. The only specific information included is that the bond would cover potential costs for capture and long-term treatment of water following closure if required to meet effluent or instream limits. We strongly support bonding for the potential of perpetual water treatment. The other two items listed (reclamation and post-closure operation and maintenance) are general and no information is provided to describe whether these general items include the mitigation measures. However, there is a longer list of mitigation requirements for Alternative IV and some of these too require long-term assurances. The DEIS makes no clear association of each mitigation measure that would require financial assurance, what the cost or range of costs each measure may require, and the assumptions and basis for the estimates. Therefore, it is unclear which, if any, of these measures would be covered by the bond. Moreover, these mitigation requirements are critical in reducing the potential for significant adverse impacts and necessitate adequate bonding. Without such specific information, we are unable to evaluate whether the potential for significant adverse impacts will occur or be reduced or rectified.

We previously provided comments on the financial assurance calculations and bond estimate to the Forest Service on February 9, 2007 and support the bond calculation. We request that our February 9, 2007 comments on the financial assurance estimate be addressed in the FEIS. As we have commented previously, we also request that the FEIS include the estimate of the financial assurance amount and the financial assurance vehicle, particularly the portion that would guarantee implementation of anticipated long-term water management and treatment tasks. We recommend including the narrative document that discusses the categories for ease of a general understanding and summary table of estimate. We also suggest that the FEIS financial assurance cost estimate be broken down by the following general categories of costs and that the mitigation measures are identified within these categories.

- Interim operations and maintenance
- Hazardous materials disposal
- Water management and treatment
- Demolition and disposal (structures, equipment, and materials)
- Site works (regarding, recontouring, TWSF cap placement)
- Revegetation
- Groundwater capture
- Post closure operations, maintenance and monitoring
- Post closure water treatment

Biological Assessment

In our comments on the PDEIS we recommended that a draft biological assessment (BA) for the preferred alternative be developed and included as an appendix to the DEIS if a draft BA could be completed within the draft EIS time frame. We also asked that if a BA is not included as an appendix, then the discussion of impacts to Threatened and Endangered (T&E) species in section 4 should be expanded. We also recommended that the EIS disclose the status and schedule of the BA. We do not feel that the section on fisheries was expanded and the status of the BA was not discussed other than to state that a BA will be prepared after the Preferred

Alternative is selected, which happened at the PDEIS stage. We recommend that the final EIS section on fisheries include a more full discussion of summary information from the BA and that a summary table be included of the T&E species along with a column of potential effects among alternatives.

We received the draft BA on March 21, 2007. We reviewed the draft BA and provided comments to the Forest Service on April 19, 2007. Table 15, Page 81 of the draft BA includes a "likely to adversely affect" determination for aquatic life for thallium, ammonia, and nitrate. Because of this draft effect determination we have environmental concerns regarding potential impacts to fish resources. We understand that this was a draft document and therefore, we have questions regarding the accuracy of the determination and how the project area is defined. These questions are further discussed in our comments on the BA. In general, we recommend that these issues be addressed in the final EIS and that the final EIS include information to reflect the BA as well as NOAA and NMFS Biological Opinion.

The following comment was provided in our PDEIS comments and the DEIS did not appear to include our recommendation. If it was provided in a different section, please provide a reference to that section in the Response to Comments. **“Pages 4-55 to 4-67, Fisheries Resources.** A conclusion of the fisheries resources section is that it is unlikely that there will be adverse impacts to fish in the area surface waters. This is because mitigations (backfill amendment, groundwater capture, etc.) and water treatment will ensure that groundwater, surface water, and sediments do not exceed State aquatic life criteria and/or Blackbird Mine cleanup goals. In order to justify this conclusion, this section of the EIS should discuss the protectiveness of the criteria and cleanup goals specifically for the fish present in the streams.”

Handling and Disposal of Contaminated Soils

In our comments on the PDEIS we had the following comment: **“Soil Salvage, page 2-34.** This is the first reference to soils management. Other places throughout the DEIS also discuss soil resources and management to some degree. However, the DEIS does not discuss whether any of the soils excavated for construction or roads or any other purpose related to the mine operation may be contaminated soil from historic mining operations that may require special handling to avoid increased erosional transport, worker protection, etc. Is it stated explicitly that all soils will remain on-site and not disposed of off-site? If there is a possibility of off-site disposal, would sampling occur to assure the soils were disposed of at an appropriate location?”

The comment was revised, edited, and submitted to the Forest Service, but remained the same substantively. The EIS appears to have been modified to include in the list of “Other Mitigation” measures for each alternative a requirement that ICP shall develop a waste rock disposal plan and indicate that disturbance of any contaminated waste rock should be coordinated with EPA and Forest Service CERCLA programs. This in part responds to our comment; however, it appears to be limited to waste rock when leachate from waste rock may have contaminated surrounding soils such that if they are excavated should be disposed of in an appropriate location. Furthermore, this issue does not appear to be discussed anywhere else in the DEIS. At a minimum, soils management should be addressed in the section of Chapter 2 entitled “Monitoring and Mitigation Measures Included in Agency Alternatives” starting on page

2-53. The subsection discussing soils in the DEIS should also address the need to have a soils management plan in place.

Cultural Resources

In our comments on the PDEIS we discussed our concerns regarding the the lack of adequate information regarding Tribes and cultural resources as well as lack of detailed analysis for potential impacts to Tribes. We are reiterating our comments since we do not believe this section was modified or expanded to include our recommendations.

The EIS discusses consultation with the Shoshone/Bannock and Nez Perce Tribes and describes the consultation that has occurred. We recommend discussing the current status and schedule for ongoing consultation. We also recommend disclosing any issues and concerns raised by the Tribes and how these concerns would be mitigated.

In Chapter 4 it is unclear what the potential impacts to Tribes would be. There is a section on Heritage Resources that discusses places on the National Register of Historic Places and a section on Social and Economic Resources; however, the DEIS did not appear to specifically address Cultural Resources in terms of Tribes and access or other culturally relevant resources. One suggestion is to not only include this analysis, but also including a separate section for Tribes in each chapter and perhaps other relevant resource sections (e.g. potentially fish and wildlife for subsistence).

SPECIFIC COMMENTS

CHAPTER 2

General-

This chapter discusses a few places that groundwater may be used for human use. The EIS should clarify that only groundwater meeting drinking water standards could be used for this purpose.

In describing Alternatives III, IV, and V, it is not clear in the DEIS that the agency modifications are adding operational objectives or reclamation objectives. In discussing FCC's proposal, objectives are laid out. Conversely, the agencies' environmental objectives for making the modifications to FCC's proposal are not as clear. Additional bulleted objectives should be added to this discussion. For example, an overall objective for some if not all of the modifications is to ensure that any surface water, sediment, or groundwater impacts from the mining operation and reclamation activity do not interfere with the Blackbird Mine Superfund cleanup and/or recontaminate relevant surface water, groundwater, and soils.

The EIS should include a list of all of the pre-construction/pre-operational design documents that must be approved prior to mine operation start-up.

Figure 2-5. Reference to the water treatment plant with the mill should be made on this figure.

Page 2-11 Section titled Backfilling, fourth paragraph. The FCC proposal for backfilling the underground workings under Alternative II indicates that the backfill would be placed in 10 feet

lifts. Backfilling using such large lifts would not allow for effective compaction and consolidation of the backfilled materials. The backfilled materials should be placed in lifts no greater than 1 ½ to 2 feet. The modifications to the FCC proposal in Alternatives III thru V should indicate that backfilling in 10 foot lifts is not appropriate and that the backfilling procedures should be modified to provide lifts of no greater than 2 feet.

Page 2-20, Tailings Disposal, Second paragraph. The FCC proposal for compaction of tailings disposed of in the TWSF indicates that compaction using truck and dozer traffic would be able to achieve 90% standard Proctor density. Given the fine-grained nature of the tailings and the difficulty of controlling and maintaining optimal moisture content, it is very unlikely that this level of compaction can be consistently achieved with only truck and dozer traffic, even under optimal conditions. It is important that adequate compaction of the tailings be achieved to avoid problems with differential settlement in the future, which could affect the integrity of the TWSF cover. The modifications to the FCC proposal in Alternatives III thru V should therefore indicate that mechanical compaction using specialized compaction equipment (e.g. sheepsfoot rollers) would be required to achieve compaction to 90% standard Proctor density in the tailings. In addition, it would be difficult to place and adequately compact the tailings during much of the winter due to precipitation and freezing conditions. The text for all alternatives should therefore be modified to indicate that disposal of tailings should be seasonally adjusted to selectively dispose of most of the tailings generated during the winter months within the mine, where conditions would be better for achieving optimal compaction. Disposal of tailings in the TWSF should only be accomplished during late spring, summer, and early fall, or at other times of the year when temperatures are high enough and precipitation low enough to allow adequate compaction of the tailings.

Page 2-20, Tailings Disposal, second paragraph, last sentence, and Page 2-21, Tailings Disposal QA/QC, third sentence. There is an inconsistency in terms of compaction level for the tailings disposed of in the TWSF. The text on page 2-20 calls for compaction to a density of 90% standard Proctor, whereas the text on page 2-21 calls for compaction to a density of 95% standard Proctor. This discrepancy should be rectified.

Page 2-24, Figure 2-8. The quantity of water and solids should be identified for each input and output shown on Figure 2-8. This should be provided as averages and also as ranges so that the maximum flows possible are identified. Disclosure of the water balance is key information to those reviewing the EIS and will demonstrate how the “no discharge of process water except net precipitation” NPDES requirement is met.

Page 2-24 and Figure 2-9 Water Management Ponds. The FCC proposal for lining of the storage and process ponds includes use of an exposed HDPE liner. The climate in the vicinity of the ponds can be extremely cold in the winter, and it is likely that significant ice will form on the surfaces of the ponds. The ice can move and shift during the winter which can result in punctures of the pond liners. The modifications to the FCC proposal in Alternatives III thru V should indicate that the HDPE pond liners would be covered with a soil or gravel layer to protect the liners from ice puncturing. A soil or gravel cover provides an additional benefit of reducing the risk of liner uplift during high wind events if the ponds are not full of water.

Page 2-29 Storm Water Management Plan. There is a good discussion in this chapter as to the requirements for storm water management outside of the mining and mill operations area. However, Chapter 4, Environmental Consequences, barely discuss this issue and how it relates to surface water quality and sediment quality.

Page 2-29, Design Criteria, second paragraph. The text calls for clean water diversion channels using V-shaped channels with 1H:1V side slopes. Sideslopes this steep on an earthen diversion channel would not be stable in the long term. Side slopes no steeper than 2H:1V should be used on an earthen diversion channel.

Page 2-35 Post-Closure Monitoring. FCC's proposal is for three years ground and surface water monitoring following cessation of pumpback. It is unclear which section discusses monitoring for a longer period of time for Alternatives III, IV, and V. Monitoring would be required for significantly longer than three years. Please clarify in the EIS.

Page 2-38, Groundwater Capture. The description in the text for keeping the mines dewatered after the mining period under Alternative III is not clear in terms of the dewatering technology. At least two techniques are available for this dewatering: 1) keep selected mine passages open and utilize dewatering pumps (similar to the active mining period), and 2) the use of dewatering wells. It is our understanding that Alternative III assumes that the dewatering will be accomplished using wells drilled through the mine workings and completed at the lower levels of the workings. For clarity, the description of this dewatering technology should be provided in the text of this section.

Page 2-40 Other Mitigation. Recommend including a bulleted item for contaminated soils/tailings handling and disposal.

Page 2-45, second full paragraph. The first sentence states that the treatment process be based on complying with New Source Performance Standards. It should also be clear that the treatment system also be designed so that the discharge meets the effluent limits in the NPDES permit, which are based on meeting Idaho water quality standards in Big Deer Creek.

Page 2-45, second complete paragraph on page. The text refers to the "proposed BT-5 pipeline system". This appears to be the first reference in the DEIS to Alternative BT-5 (selected as the preferred alternative by EPA in the 2003 ROD for the Blackbird Mine Superfund Site) to route Bucktail Creek flows around South Fork Big Deer Creek. For the reader unfamiliar with EPA's ROD or with the Blackbird Mine cleanup, the text should reference the summary of the Bucktail remedial actions provided on page 3-79.

Page 2-49, Water Management and Treatment and Figure 2-13. The description of Alternative V does not address supply of clean and/or treated makeup water for the milling processes. The description for Alternative V should include a metals conditioning process within the mill building to treat the mine waters sufficiently to allow for use in the milling processes. Alternatively, the descriptions should indicate that a pipeline would be constructed (from either the BMSG water treatment plant or some other clean water source) to provide makeup water for

the milling processes. The potential environmental impacts of the makeup water supply system should also be included in the evaluations of Chapter 4.

Pages 2-50 and 2-51, Other Mitigation. The listing of Other Mitigation should include an agreement between FCC and the BMSG for upgrading of the BMSG's water treatment plant and an agreement between FCC and the BMSG for long term operation, maintenance, and monitoring associated with operation of the BMSG's water treatment plant.

CHAPTER 3

Page 3-10 "Past and Ongoing Actions Relevant to Current Conditions." The discussion of the Blackbird Mine Site and Ongoing CERCLA Response sections would benefit from a clear articulation from the Record of Decision of each media found to have been presenting an ecological or human health risk. Impacts to sediment quality in surface water are not discussed nor are the sediment cleanup goals.

Page 3-10 "Past and Ongoing Actions Relevant to Current Conditions." This section should discuss more specifically the Idaho 303(d) listings in the surface waters in and around the ICP, including what constituents and standards are the streams listed as impaired for and what beneficial uses are not being attained. Likewise, if any state determinations have been made as to groundwater quality, it should be discussed too.

Page 3-18. References to contaminant levels in groundwater should be accompanied by relevant regulatory or risk-based standards to enable a comparison.

Page 3-29 Sediment Quality. It would be useful to have the sediment contaminant levels found as part of the RI/FS referenced in this discussion and also discuss the risk-based sediment cleanup goals.

Page 3-79, Remedial Actions, second sentence. The diversion facility to route Bucktail Creek flows around South Fork Big Deer Creek is described in the text as a diversion ditch. EPA's ROD for the Blackbird Mine site indicates that this diversion facility would incorporate a buried pipeline rather than a diversion ditch. The text should be corrected accordingly.

Page 3-81, Remedial Actions, last sentence. The sentence in the EIS states, "The need for or timing of any Contingent Actions is not known..." The potential need for reduction in metals loads in Bucktail Creek and South Fork Big Deer Creek through removal of sediments along these drainages is indeed described in the CERCLA ROD. However, sediment removal along these creeks is included in the ROD as part of the Contingent Actions, and in fact is one of several potential actions that could be taken if water quality goals are not met in Big Deer Creek or South Fork Big Deer Creek. The need for these Contingent Actions will be determined by EPA based upon water quality monitoring following completion of the Remedial Actions. Since these actions are described as Contingent Actions in the ROD, this sentence should be deleted from the Remedial Actions section of the EIS. The Contingent Actions section in the paragraph immediately below the Remedial Actions section appropriately describes the potential Contingent Actions, including removal of sediments along Bucktail Creek and South Fork Big Deer Creek.

CHAPTER 4

General-

Sediment quality impacts and necessary measures to assure no further degradation or recontamination should be discussed.

Table 4-6. Change “sulfite” to “sulfide.”

Page 4-6, Item No. 4, continuing on to page 4-7. The text indicates that Alternative II is predicted to cause an increase in copper concentrations in groundwater down gradient from the Sunshine Mine. Alternatives IV and V would also likely cause an increase in copper concentrations in groundwater down gradient from the Sunshine Mine. This likely increase in copper concentrations for Alternatives IV and V should be described in the text.

Page 4-7, Item No. 6. The quantity of ICP water and chemical mass loads potentially intercepted by BMSG is expected to be “very small”. Quantify “very small” in terms of range of flow or chemical mass. Also, compare across alternatives the amount of chemical mass loads that would be intercepted from BMSG sources.

Pages 4-12-18. The storm water permit requirement and stormwater management should be discussed.

Page 4-27, section titled *Streamflow Effects*, page 4-35, section titled *Surface Water Flow*, and page 4-42, section titled *Surface Water Flow Effects*. Recent streamflow measurements by the BMSG indicate that the reduced streamflows during baseflow conditions in the future in Bucktail Creek, South Fork Big Deer Creek, and Big Deer Creek will be somewhat different than the values indicated in these sections. These streamflow measurements and the streamflow reduction calculations based upon these measurements are summarized in the attached Table 1. There are two primary reasons for the differences between the reduced streamflow values presented in the Draft EIS and those presented in Table 1: a) the values presented in Table 1 are based on BMSG measurements in Bucktail Creek during baseflow conditions in the fall from 2002 to 2006, which are different from the streamflow measurements used for the Draft EIS and b) the values presented in Table 1 include reduced streamflow estimates resulting from the BMSG Remedial Actions recently completed in upper Bucktail Creek. To summarize, Table 1 indicates that reduced flows during baseflow conditions during Ram operations prior to the BT-5 diversion would be approximately 65% in lower Bucktail Creek, 10% in South Fork of Big Deer Creek, and 2% in Big Deer Creek. Following implementation of the BT-5 diversion, flow reductions would be approximately 100% in lower Bucktail Creek (below the diversion), 15% in South Fork of Big Deer Creek, and 2% in Big Deer Creek (because of mine dewatering per the draft EIS). These estimates are based upon assumptions that the Ram operations would reduce the flows in lower Bucktail Creek by 44% from pre-2007 conditions (per the draft EIS) and that the BMSG actions in upper Bucktail Creek would reduce the flows at Station BTSW-01.6 (just downstream from the BMSG actions) by 75%. Please make the above correction in the EIS.

Page 4-33 and page 4-40, *Surface Water Flow* and page 4-64, *Aquatic Habitat*. The text regarding flows in Bucktail Creek during Ram operations and after BT-5 is constructed for

Alternatives III and V is potentially confusing as written. The text should be clarified to indicate that the reduction in flow in Bucktail Creek is estimated at 100 percent downstream from the BT-5 diversion structure. The text should also include an estimate of the reduction in flow in Bucktail Creek upstream from the BT-5 diversion structure.

Page 4-38, third paragraph and page 4-40, third paragraph: The text in these paragraphs refers to a mixing zone for sulfate. It should be clear that no mixing zone has been authorized by the state.